BEFORE THE POSTAL RATE COMMISSION WASHINGTON, D.C. 20268-0001

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POSTAL RATE COMMISSING OFFICE OF THE SECRETARY

Docket No. R97-1

POSTAL RATE AND FEE CHANGES, 1997

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS WADE TO INTERROGATORIES OF MAGAZINE PUBLISHERS OF AMERICA (MPA/USPS-T20-1-6)

The United States Postal Service hereby provides responses of witness Wade to the following interrogatories of Magazine Publishers of America: MPA/USPS-T20---1-6, filed on August 21, 1997.

Each interrogatory is stated verbatim and is followed by the response.

Respectfully submitted,

UNITED STATES POSTAL SERVICE

By its attorneys:

Daniel J. Foucheaux, Jr. Chief Counsel, Ratemaking

Eric P. Koetting

475 L'Enfant Plaza West, S.W. Washington, D.C. 20260–1137 (202) 268–2992; Fax –5402 September 4, 1997

<u>MPA/USPS-T20-1</u> Please refer to Page 6 of your testimony, in which you describe a survey of plant and distribution facilities which provides the data for your analysis of the volume variability for Vehicle Service Drivers,

- a. Please define "usable and consistent information" as used on Page 6, Line 7 of your testimony. Also, please describe the process used to determine whether individual survey responses were "usable and consistent".
- b. Does the Postal Service have workpapers showing how each facility which responded to the VSD Survey developed its load factor estimates? If yes, please provide them.
- c. Please describe the underlying data that are necessary for developing an accurate estimate of average load factor by truck type. Also, please describe how to calculate average load factor by truck type from these underlying data.
- d. How many of the facilities responding to the survey have information systems containing the underlying data necessary to calculate load factors for each truck type? If this figure does not include all 89 facilities which responded with "usable and consistent information", how did personnel at the other facilities develop responses to the survey?
- e. What was the Postal Service's process for reviewing survey responses and ensuring data quality?
- f. Were personnel penalized in any way for providing incorrect data on the VSD survey form? Were personnel rewarded in any way for providing correct data on the VSD survey form?
- g. Did the Postal Service provide additional funding to facilities to complete the VSD survey form?
- h. How much time were facility personnel given to complete the VSD survey form?
- i. Did facilities that did not have the information necessary to complete the survey have the time and money to perform a study to estimate the average load factor? If yes, did any facilities perform a study to help them answer the survey?
- j. Did facility personnel know what the Postal Service was going to do with the responses to the survey?
- k. What was the original purpose of the VSD Survey?

- 1. Do you believe that facility personnel would have an incentive to over-report load factors on the survey?
- m. Do you believe that facility personnel would have an incentive to under-report load factors on the survey?
- n. Please provide a copy of the instructions sent to facilities on how to complete the survey. Also, please provide a summary of any verbal instructions provided to facility personnel.
- o. Please explain why about 40 percent of the respondents failed to provide "usable and consistent" information in response to this survey.
- p. Please provide a copy of each facility's completed survey submission.

RESPONSE:

- a. "Usable and consistent information" is how I characterized the arrival to the sample of 89 facilities. Facilities either didn't respond, or the responses were not usable. Responses were usable if the facility returned the cover sheet with facility totals and included the PS Forms 4533, and if the Form 4533 had mileage and workhour data. Responses which were not complete were not used unless they were from one of the 10 largest facilities. The ten largest facilities were contacted directly to insure that their responses were as complete as their data would allow and consistent with our request. Using this approach the largest facilities made the initial sample of 89 facilities.
- b. In 1990, during a dry run of the data gathering procedures, facilities were asked to provide, if available, any daily logs (transportation efficiency reports TERs) that detail load factors for all trips or logs that list any extra (non-scheduled) service. We discovered that most of the sampled offices did not make use of any form, including the TER consistently. Moreover, for those offices which submitted forms, we were not able to effectively use the data. Therefore, we opted to rely on the field experts who prepare the PS Form 4533's to derive the load factor estimates. We asked them to use all available information to develop the estimates. Asking the sites to provide supporting documentation for this calculation would have been burdensome and based on our experience would not have enhanced the study. We did ask those sites who used TERs to provide them. Some facilities did include TERs and other logs detailing trips in their responses, but those data were not used.

- c. To measure precisely average load factors by truck type and trip type combination, actual measurements of capacity utilization would need to be made for each stop, on each route, every day. To achieve precise accuracy for computing CFM, the individual load factors need to be appropriately weighted. Thus, the route length for each load factor estimate should be used as weights to weight-average the individual load factor observations.
- d. The survey form did not provide guidelines as to how to estimate load factors. To my knowledge, information allowing the direct calculation of load factors is not available. I view the responses as being estimates made by knowledgeable personnel.
- e. The data were entered in spreadsheets which checked for consistency of the answers (e.g., verifying that percentages that should add to 100% did indeed do so; the number of scheduled routes was consistent the number of drivers). In general whether the totals from the spreadsheet lead to the summary totals on the MVS Questionnaire. Moreover, the trip information entered on the Form 4533 was evaluated to see if the 'type of trip' apportionment was in line with the descriptions of the activities on the forms.
- f. Rewards or penalties were not employed.
- g. No additional funding was provided to facilities to respond to the survey.
- h. It was up to the individual manager to determine how much time was needed. The survey requested a response within approximately 30 days.
- i. To the best of my knowledge no formal studies or data collection activities were undertaken.
- j. While facility personnel did not precisely know what would be done with the information, it was stated that the use was to "improve our method of attributing driver costs".
- k. The original purpose was to provide information to calculate VSD variability.
- 1. No. I know of no incentive to misreport the information.
- m. No. I know of no incentive to misreport the information.
- n. Attached is the memorandum and blank survey form provided to the facility managers requesting participation in the survey.

- o. If the reference is to the 36 of the 89 facilities that I excluded for data reasons, Workpaper B, pages 3 and 4 detail this information. There were some illegible forms and missing information, data errors or potential issues were found in some spreadsheets which couldn't be verified or corrected without reviewing the voluminous Form 4533 data. My involvement covered a fairly short period of time. With more time, I would have attempted to use as many of the 89 facilities as possible.
- p. The completed survey information is provided in the individual facility spreadsheets in a form which is the same format as the survey form. See for example the spreadsheet "Fac_02.xls", sheet "F2" in LR-H-150 for the survey responses.



United States Postal Service 475 L'Enfant Plaza SW Washington DC 20260-1400

August 12, 1993

MEMORANDUM FOR MANAGERS VEHICLE MAINTENANCE FACILITIES

SUBJECT: Request for VMF Driver Information

Revenue, Volume, and Cost Analysis at headquarters is performing a study for the Postal Rate Commission of Motor Vehicle Service (MVS) Operators. The purpose of the study is to improve our method of attributing driver costs to each of the correct classes of mail. To perform this task, your assistance is needed.

In order to minimize burdens placed on your operational units, we have simplified our request. The tasks should require no more than two hours to complete. An analyst knowledgeable in MVS operations should answer the attached questionnaire. Please send the completed questionnaire, a copy of PS Form 4533 (Postal Service Motor Vehicle Schedule [MVS]) for each route, and a copy of the June 5-18, 1993 Transportation Efficiency Report to:

Dennis P. Stevens Revenue, Volume & Cost Analysis 475 L'Enfant Plaza SW, RM 1520 Washington DC 20260-5322

If you use a form other than the Transportation Efficiency Report to track radio dispatched trips, please send that form with a brief description of what the form records and how the information is used. The questionnaire and forms will be analyzed with those from other facilities. The reported results will be summarized but will not be used to evaluate or rate individual employees or offices.

Please forward the total package (questionnaire and forms) by COB September 7, 1993. If you have any questions or require any assistance regarding the proper completion of the enclosed material, please contact Dennis Stevens at (202) 268-3786.

Attachment

cc: Managers, Customer Services Districts

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return to:

Dennis P. Stevens MVS Survey United States Postal Service 475 L'Enfant Plaza SW, Room 1520 Washington, DC 20200-5322

MPA/USPS-T20-2. Please refer to USPS-T.20, Workpaper B, Page 1, Lines 5 and 6, where you state "Each sheet incorporates both the survey information and the data from Form 4533 for one of the 89 facilities in the survey" and Page 6, Lines 6-7 of your testimony.

- a. How many facilities, including BMCs, use vehicle service drivers?
- b. Do you believe that the 89 facilities that responded to tile survey form with usable and consistent information" comprise a representative sample of all facilities that use vehicle service drivers? Please explain your answer.
- c. Did you perform any statistical tests to assess whether the 89 facilities comprise a representative sample of all VSD facilities? If yes, please identify each test, explain the specifications of each test fully, and provide the significance level of each test.
- d. Did the personnel who completed the Form 4533 forms know that the Postal Service planned to use this information for the purpose of estimating the volume variability of VSD costs?

RESPONSE:

- a. There are 21 BMCs. In 1993, there were 149 facilities which had significant VSD workhours. There were another 213 that reported workhours greater than zero, but many of these had very small usage, indicating possible data entry errors or transfers. See the response to UPS/USPS-T20-1 for a listing.
- b. The 89 facilities account for over 75% of non-BMC VSD workhours and the included facilities encompass a wide range of facility sizes. Thus the sample should be quite representative.
- c. No tests were performed.
- d. The Forms 4533 are filled out routinely as part of VSD procedures and were not done specifically for this study. Thus, personnel completing Form 4533 would have likely been unaware that any study using these forms was being or would be undertaken.

<u>MPA/USPS-T20-3</u>. Please refer to USPS-T-20, Workpaper B, Pages 1 and 2 and Page 6, Lines 6-7 of your testimony.

- a. Please confirm that you omitted 36 of the 89 facilities due to data issues.
- b. Do you believe that the 53 remaining facilities comprise a representative sample of the 89 VSD facilities "that responded to the survey form with usable and consistent information"? Please explain your reasoning in as much detail as possible.
- c. Did you perform any statistical tests to assess whether the 53 facilities comprise a representative sample of the 89 facilities that completed your survey? If so, which tests did you perform? Please explain the specifications of each test fully. What was the significance level of each test?
- d. Suppose that the average load factor for a facility for dispatches to stations/branches was exactly 70 percent and that, on the survey, personnel responded that the average load factor for dispatches to stations/branches was exactly 70 percent.
 - (i) Please confirm that this response by personnel was more accurate than if personnel had followed instructions and stated that their average load factor was 75 percent.
 - (ii) Please also confirm that you would have omitted this response by personnel before performing your regressions.
- e. In light of your answer to (d), do you believe that average load factors other then "0%, 25%, 50%, 75% or 100% (these were the only survey options)" are less accurate than load factors of 0%, 25%, 50%, 75%, or 100%?
- f. On page 1 of USPS-T-20, Workpaper B, you provide three reasons why you omitted facilities (1) percentages did not add to 100 percent for all relevant route characteristic; (2) CFM were not computed for "valid" routes; and (3) load factors were not one of the survey options.
 - (i) Please provide the number of facilities omitted for each such reason.
 - (ii) Please list any other reasons why you omitted facilities and provide the number of facilities omitted for each such reason.

RESPONSE:

a. I eliminated the 36 observations because of concerns about the data for those facilities. I attempted to use as many observations as possible.

- b. The remaining 53 facilities account for approximately 43% of non-BMC VSD workhours -- and the included facilities still encompass a wide range of facility sizes. Thus the sample should still be quite representative.
- c. No statistical tests were performed to assess whether the 53 facilities comprised a representative sample.
- d. (i) Confirmed. In fact, 17 of the 53 facilities responded with percentages different from 0%, 25%, 50%, 75%, or 100%.
 - (ii) The observation would not have been deleted for this reason. As a case in point, Facility 30 (see Workpaper C, page 4) includes load factors of 90%, 85% and 20%, but was not deleted.
- e. Actual precise load factors would be more accurate. However, actually measuring them would raise issues of frequency of measurement, who measures, how does measurement affect service, how costly would measurement be, etc....
- f. (i) For a listing of the reasons facilities were omitted, see Workpaper B, Pages 3 and 4.
 - (ii) I had no other reasons for omitting facilities beyond those listed.

- g. MPA/USPS-T20-4. Please refer to USPS-T-20, Workpaper C, Page 2 and USPS-T-20, Workpaper B, Page 1.
- a. Please confirm that you calculated cubic foot miles using the equation shown on Workpaper C, Page 2. Lines 16 and 17 and that this equation uses the load factors from the VSD Survey Form.
- b. Please confirm that cubic-foot miles for Facility 2 is 3,472,698.
 - (i) How confident are you that this figure is exactly equal to the actual number of cubic foot miles for Facility 2.
 - (ii) How confident are you that the true number of cubic foot miles for Facility 2 is within 25 percent of this figure?
 - (iii) How confident are you that the true number of cubic foot miles for Facility 2 is within 50 percent of this figure?
 - (iv) Please list any statistical tests you performed to arrive at your answers.

RESPONSE:

- Confirmed. Load factor is indeed a part of the computation and was supplied by the survey.
- b. Confirmed, cubic-foot miles (CFM) for Facility 2 is 3,472,698.
 - (i) Since the survey did not ask for precise load factor estimates, it is not very likely that CFM are precisely this value.
 - (ii) I am fairly confident that the estimate would be within 25%. There are three issues regarding accuracy -- rounding, observation error and aggregation.

Rounding: The maximum percentage error caused by asking for categories instead of precise values and assuming that load factors were precisely known and properly rounded would be only 12.5%. In most cases, the actual error should be less than this amount. One exception is that if a load factor rounded to zero, then CFM estimate would end up being zero. In such a case, the percentage error for that route would be -100%. I found only two occurrences of a load factor rounded to zero in the data used in the model for the base year variability estimate.

Observation Error: It is likely that the survey respondent based the load factor estimates on judgement from past experiences and approximations. These measures are recognized as somewhat inexact and thus will incorporate potential errors.

Aggregation: Another source of potential error occurs when several trucks of the same type are used for the same trip type. If both load factors and route lengths are different across the individual trucks, then applying an average load factor to the individual runs will cause potential errors in the computation of CFM.

- (iii) I am quite confident that the estimate would be within 50%.
- (iv) I performed no statistical tests in arriving at the answers to (i)-(iii) above.

MPA/USPS-T20-5. Please refer to USPS-T-20, Workpaper A, Page 1 and Page 19 of your testimony, Lines 20-23.

- a. Please confirm that the survey form on Page 1 of Workpaper A is the one that was used to collect information on the load factor.
- b. The following questions concern the reporting of average load factors
 - (i) If facility personnel knew that the average load factor for Trips to AO's, AMTRAK, AMFs, Other Offices was 62 percent, what should they have reported as the load factor on the survey?
 - (ii) If facility personnel knew that the average load factor for Trips to AO's, AMTRAK, AMFs, Other Offices was 12 percent, what should they have reported as the load factor on the survey?
 - (iii) If facility personnel knew that the average load factor for Trips to AO's, AMTRAK, AMFs, Other Offices was 5 percent, what should they have reported as the load factor on the survey?
 - (iv) If facility personnel knew that the average load factor for Trips to AO's, AMTRAK, AMFs, Other Offices was 13 percent, what should they have reported as the load factor on the survey?
 - (v) If facility personnel knew that the average load factor for Trips to AO's, AMTRAK, AMFs, Other Offices was 37 percent, what should they have reported as the load factor on the survey?
 - (vi) If facility personnel knew that the average load factor for Trips to AO's, AMTRAK, AMFs, Other Offices was 38 percent, what should they have reported as the load factor on the survey?
 - (vii) If facility personnel knew that the average load factor for Trips to AO's, AMTRAK, AMFs, Other Offices was 63 percent, what should they have reported as the load factor on the survey?
 - (viii) If facility personnel knew that the average load factor for Trips to AO's, AMTRAK, AMFs, Other Offices was 87 percent, what should they have reported as the load factor on the survey?
 - (ix) If facility personnel knew that the average load factor for Trips to AO's, AMTRAK, AMFs, Other Offices was 88 percent, what should they have reported as the load factor on the survey?

- Assume that a facility reported an average load factor for a truck type of 50 ¢. percent. In your answers to the following questions, please be as quantitative as possible. Please describe fully any statistical tests you performed to arrive at your answers.
 - (i) How certain are you that the actual load factor was exactly 50 percent?
 - How certain are you that the actual load factor was somewhere (ii) between 40 percent and 60 percent?
 - How certain are you that the actual load factor was somewhere (iii) between 25 percent and 75 percent?
- Model 5 estimates that the volume variability is 65.4% and the 95 percent d. confidence interval around this estimate is between 53.1% and 77.7% Please describe fully the method you used to determine the 95 percent confidence interval.
- Please confirm that your 95 percent confidence interval does not take into account e. the fact that your values for CFM are imprecise because they're based upon imprecise estimates of load factors. Please also confirm that taking into account the imprecision in your CFM estimates would increase the size of your 95 percent confidence interval.

RESPONSE:

- Confirmed. a.
- 50% b. (i)
 - 0% (ii)
 - (iii) 0%

 - (iv) 25%
 - (v) 25%
 - 50% (vi)
 - 75% (vii)
 - 75% (viii)
 - 100% (ix)
- (i) Not very certain, it would be fairly unusual for a load factor to be precisely c. 50.0%.

- (ii) Fairly certain. The half-interval has a width of 10% which is just under the average rounding error of 12.5%.
- (iii) Quite confident.
- d. The 95 percent confidence interval was provided directly by the Excel regression software since I estimated the logarithmic model by first normalizing (dividing by means) each variable. Thus, the variability at the mean is the coefficient of CFM. Its 95 percent confidence interval is computed directly from the standard error of the CFM coefficient.
- e. I can't confirm this. From Dhrymes, <u>Introductory Econometrics</u>, Springer-Verlag, 1978, page 266: "No unambiguous statement may be made regarding the t-ratios of OLS estimated parameters in an EIV context relative to those that would prevail if error free observations were available." Since the both the t-ratio and the confidence intervals are related to standard errors, the confidence interval could be either smaller or larger.

MPA/USPS-T20-6. Please refer to LR-H-150, Workbook data_sum.xls, Worksheet Survey Data. Please provide a data dictionary for this worksheet or, alternatively, define the meaning of each column heading.

RESPONSE: The following table lists the meanings for each column.

Column	Concept Name	Meaning	Comments
Α	Facility	Numbering Scheme	1 through 89
В	MVS_FT	From survey, see Workpaper C, page 4	Directly from survey form
С	MVS_PTF	From survey, see Workpaper C, page 4	Directly from survey form
D	MVS_TRA	From survey, see Workpaper C, page 4	Directly from survey form
Ε	MVS_TEM	From survey, see Workpaper C, page 4	Directly from survey form
F	TRAC_FT	From survey, see Workpaper C, page 4	Directly from survey form
G	TRAC_PTF	From survey, see Workpaper C, page 4	Directly from survey form
Н	TRAC_TRA	From survey, see Workpaper C, page 4	Directly from survey form
1	TRAC_TEM	From survey, see Workpaper C, page 4	Directly from survey form
J	SPOT_FT	From survey, see Workpaper C, page 4	Directly from survey form
K	SPOT_PTF	From survey, see Workpaper C, page 4	Directly from survey form
L	SPOT_TRA	From survey, see Workpaper C, page 4	Directly from survey form
M	PCEN_MVS	From survey, see Workpaper C, page 4	Directly from survey form
N	PCEN_TRA	From survey, see Workpaper C, page 4	Directly from survey form
0	PCEN_SPO	From survey, see Workpaper C, page 4	Directly from survey form
Р	TOTLDISP	From survey, see Workpaper C, page 4	Directly from survey form
Q	TOTLHAUL	From survey, see Workpaper C, page 4	Directly from survey form
R	TOTLCOLL	From survey, see Workpaper C, page 4	Directly from survey form
S	TOTLFIRM	From survey, see Workpaper C, page 4	Directly from survey form
T	TOTLOTHR	From survey, see Workpaper C, page 4	Directly from survey form
U	total check	Checksum for trip type percentages	Should be 100%
V	PCENDISP	From survey, see Workpaper C, page 4	Directly from survey form
W	PCENHAUL	From survey, see Workpaper C, page 4	Directly from survey form
Χ	PCENCOLL	From survey, see Workpaper C, page 4	Directly from survey form
Υ	PCENFIRM	From survey, see Workpaper C, page 4	Directly from survey form
Z	PCENOTHR	From survey, see Workpaper C, page 4	Directly from survey form
AA	Unused	Unused	Unused
AB	5A1	From survey, see Workpaper C, page 4	Directly from survey form
AC	5B1	From survey, see Workpaper C, page 4	Directly from survey form
AD	5C1	From survey, see Workpaper C, page 4	Directly from survey form
ΑE	5A2	From survey, see Workpaper C, page 4	Directly from survey form
AF	5B2	From survey, see Workpaper C, page 4	Directly from survey form
AG	5C2	From survey, see Workpaper C, page 4	Directly from survey form
AH	5A3	From survey, see Workpaper C, page 4	Directly from survey form
Αl	5B3	From survey, see Workpaper C, page 4	Directly from survey form
AJ	5C3	From survey, see Workpaper C, page 4	Directly from survey form
AK	5A4	From survey, see Workpaper C, page 4	Directly from survey form
AL	5B4	From survey, see Workpaper C, page 4	Directly from survey form
AM	5C4	From survey, see Workpaper C, page 4	Directly from survey form

AN	5A5	From survey, see Workpaper C, page 4	Directly from survey form
AO	5B5	From survey, see Workpaper C, page 4	Directly from survey form
AP	5C5	From survey, see Workpaper C, page 4	Directly from survey form
AQ	Unused	Unused	Unused
AR	7A1	From survey, see Workpaper C, page 4	Directly from survey form
AS	7B1	From survey, see Workpaper C, page 4	Directly from survey form
			Directly from survey form
AT	7C1	From survey, see Workpaper C, page 4	Directly from survey form
AU	7A2	From survey, see Workpaper C, page 4	Directly from survey form
AV	7B2	From survey, see Workpaper C, page 4	•
AW	7C2	From survey, see Workpaper C, page 4	Directly from survey form
AX	7A3	From survey, see Workpaper C, page 4	Directly from survey form
AY	7B3	From survey, see Workpaper C, page 4	Directly from survey form
ΑZ	7C3	From survey, see Workpaper C, page 4	Directly from survey form
BA	7A4	From survey, see Workpaper C, page 4	Directly from survey form
BB	7B 4	From survey, see Workpaper C, page 4	Directly from survey form
BC	7C4	From survey, see Workpaper C, page 4	Directly from survey form
BD	7A5	From survey, see Workpaper C, page 4	Directly from survey form
BE	7B5	From survey, see Workpaper C, page 4	Directly from survey form
8F	7C5	From survey, see Workpaper C, page 4	Directly from survey form
BG	Unused	Unused	Unused
BH	9A1	From survey, see Workpaper C, page 4	Directly from survey form
ВІ	9B1	From survey, see Workpaper C, page 4	Directly from survey form
BJ	9C1	From survey, see Workpaper C, page 4	Directly from survey form
BK	9A2	From survey, see Workpaper C, page 4	Directly from survey form
BL	9B2	From survey, see Workpaper C, page 4	Directly from survey form
ВМ	9C2	From survey, see Workpaper C, page 4	Directly from survey form
BN	9A3	From survey, see Workpaper C, page 4	Directly from survey form
BO	9B3	From survey, see Workpaper C, page 4	Directly from survey form
BP	9C3	From survey, see Workpaper C, page 4	Directly from survey form
BQ	9A4	From survey, see Workpaper C, page 4	Directly from survey form
BR	984	From survey, see Workpaper C, page 4	Directly from survey form
BS	9C4	From survey, see Workpaper C, page 4	Directly from survey form
BT	9A5	From survey, see Workpaper C. page 4	Directly from survey form
BU	9B5	From survey, see Workpaper C, page 4	Directly from survey form
BV	9C5	From survey, see Workpaper C, page 4	Directly from survey form
BW	Unused	Unused	Unused
BX	79A1	From survey, see Workpaper C, page 4	Directly from survey form
BY	79B1	From survey, see Workpaper C, page 4	Directly from survey form
BZ	79C1	From survey, see Workpaper C, page 4	Directly from survey form
CA	79A2	From survey, see Workpaper C, page 4	Directly from survey form
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СВ	79B2	From survey, see Workpaper C, page 4
CC	79C2	From survey, see Workpaper C, page 4
CD	79A3	From survey, see Workpaper C, page 4
CE	79B3	From survey, see Workpaper C, page 4
CF	79C3	From survey, see Workpaper C, page 4
CG	79A4	From survey, see Workpaper C, page 4
CH	79B4	From survey, see Workpaper C, page 4
CI	79C4	From survey, see Workpaper C, page 4
CJ	79A5	From survey, see Workpaper C, page 4
CK	79B5	From survey, see Workpaper C, page 4
CL	79C5	From survey, see Workpaper C, page 4
CM	Unused	Unused
CN	TTA1	From survey, see Workpaper C, page 4
ÇO	TTB1	From survey, see Workpaper C, page 4
CP	TTC1	From survey, see Workpaper C, page 4
CQ	TTA2	From survey, see Workpaper C, page 4
CR	TTB2	From survey, see Workpaper C, page 4
CS	TTC2	From survey, see Workpaper C, page 4
CT	TTA3	From survey, see Workpaper C, page 4
CU	TTB3	From survey, see Workpaper C, page 4
CV	TTC3	From survey, see Workpaper C, page 4
CW	TTA4	From survey, see Workpaper C, page 4
CX	TTB4	From survey, see Workpaper C, page 4
CY	TTC4	From survey, see Workpaper C, page 4
CZ	TTA5	From survey, see Workpaper C, page 4
DΑ	TTB5	From survey, see Workpaper C, page 4
DB	TTC5	From survey, see Workpaper C, page 4
DC	Unused	Unused
DD	OA1	From survey, see Workpaper C, page 4
DΕ	QB1	From survey, see Workpaper C, page 4
DF	OC1	From survey, see Workpaper C, page 4
DG	OA2	From survey, see Workpaper C, page 4
DH	OB2	From survey, see Workpaper C, page 4
DI	OC2	From survey, see Workpaper C, page 4
DJ	OA3	From survey, see Workpaper C, page 4
DK	OB3	From survey, see Workpaper C, page 4
DL	OC3	From survey, see Workpaper C, page 4
DM	OA4	From survey, see Workpaper C, page 4
DN	OB4	From survey, see Workpaper C, page 4
DO	OC4	From survey, see Workpaper C, page 4

Directly from survey form Unused Directly from survey form Unused Directly from survey form Directly from survey form

DP	OA5	From survey, see Workpaper C, page 4	Directly from survey form
DQ	OB5	From survey, see Workpaper C, page 4	Directly from survey form
DR	QC5	From survey, see Workpaper C, page 4	Directly from survey form
DS	total check A1	Checksums for trip type by truck type for Dispatches to S&B	Should be 100% summed across truck types
DT	total check A2	Checksums for trip type by truck type for Trips to AOs,	Should be 100% summed across truck types
DÙ	total check A3	Checksums for trip type by truck type for Collections at S&B, Boxes	Should be 100% summed across truck types
DV	total check A4	Checksums for trip type by truck type for Firm Collections	Should be 100% summed across truck types
DW	total check A5	Checksums for trip type by truck type for Other trips	Should be 100% summed across truck types
DX	total check 5B	Checksums for truck type by trip type percentages for 5 ton	Should be 100% summed across trip types.
DY	total check 7B	Checksums for truck type by trip type percentages for 7 ton	Should be 100% summed across trip types.
DZ	total check 9B	Checksums for truck type by trip type percentages for 9 ton	Should be 100% summed across trip types.
EA	total check 798	Checksums for truck type by trip type percentages for 7/9 ton	Should be 100% summed across trip types.
EB	total check TTB	Checksums for truck type by trip type percentages for tractor trailer	Should be 100% summed across trip types.
EC	total check OB	Checksums for truck type by trip type percentages for other trucks	Should be 100% summed across trip types.
ED	\$SCHEDU	Schedule Number	Directly from Form 4533
EE	DAILYMI	From Form 4533, see Workpaper C, page 5	Directly from Form 4533
EF	\$FREQ	From Form 4533, see Workpaper C, page 5	Directly from Form 4533
EG	PAIDTIME	Time for single-vehicle schedules from Form 4533, see Workpaper C, page 5	Directly from Form 4533
EH	MPDTIME	Time for multiple-vehicle route, apportioned by vehicle type/capacity	Directly from Form 4533
E1	Truck Capacity	From Form 4533, see Workpaper C, page 5	Directly from Form 4533
EJ	ANNUALMI	From Form 4533, see Workpaper C, page 5	Directly from Form 4533
EK	TRIPS	Number of trips from origin and back	Derived from Form 4533 by route and summed
EL	SPOTTER	Start Times for spotter activities for each route	Computed from Form 4533, multiple vehicle routes only
EM	SPOTTER	Start Times for spotter activities for each route	Computed from Form 4533, multiple vehicle routes only
EN	ST TRACT	Start Times for tractor trailer activities for each route	Computed from Form 4533, multiple vehicle routes only
EO	ENDTRACT	Start Times for tractor trailer activities for each route	Computed from Form 4533, multiple vehicle routes only
EP	Unused	Unused	Unused
EQ	ST 9TON	Start Times for 7/9 ton truck activities for each route	Computed from Form 4533, multiple vehicle routes only
ER	END9TON	Start Times for 7/9 ton truck activities for each route	Computed from Form 4533, multiple vehicle routes only
ES	Unused	Unused	Unused
ET	ST_5TON	Start Times for 5 ton truck activities for each route	Computed from Form 4533, multiple vehicle routes only
ΕU	END5TON	Start Times for 5 ton truck activities for each route	Computed from Form 4533, multiple vehicle routes only
EV	Unused	Unused	Unused
EW	Unused	Unused	Unused
EX	ANNUALHR	Not used in VSD model, or downstrem calculations, often not entered	Not used in VSD model
EY	NIGHTDIF	Not used in VSD model, or downstrem calculations, often not entered	Not used in VSD model
EZ	DAILYHR	Not used in VSD model, or downstrem calculations, often not entered	Not used in VSD model
FA	SATHOURS	Not used in VSD model, or downstrem calculations, often not entered	Not used in VSD model
FΒ	SUNHOURS	Not used in VSD model, or downstrem calculations, often not entered	Not used in VSD model
FC	HOLIHRS	Not used in VSD model, or downstrem calculations, often not entered	Not used in VSD model

FD	Unused	Unused	Unused
FE	CLOCK IN	Derived from Form 4533 arrive and leave times in minutes	Computed from Form 4533
FF	ON CALL	Derived from Form 4533 arrive and leave times in minutes Computed from Form 4533	
FG	SPOTTER	Derived from Form 4533 arrive and leave times in minutes	Computed from Form 4533
FH	MANEUVE	Derived from Form 4533 arrive and leave times in minutes	Computed from Form 4533
FI	LOAD	Derived from Form 4533 arrive and leave times in minutes	Computed from Form 4533
FJ	TRAINING	Derived from Form 4533 arrive and leave times in minutes	Computed from Form 4533
FK	WASHUP	Derived from Form 4533 arrive and leave times in minutes	Computed from Form 4533
FL	NON MVS	Derived from Form 4533 arrive and leave times in minutes	Computed from Form 4533
FM	Unused	Unused	Unused
FN	Unused	Unused	Unused
FO	Unused	Unused	Unused
FP	MILESTT	Apportioned daily mites for multi-vehichle routes.	Computation
FQ	MILES9T	Apportioned daily miles for multi-vehichle routes.	Computation
FR	MILES5T	Apportioned daily miles for multi-vehichle routes.	Computation
FS	TOTMILES	Apportioned daily miles for multi-vehichle routes.	Computation
FT	ATTRHOUR	Scheduled hours	Computation
FU	ADJHOUR	Scheduled hours adjusted for unscheduled trips	Computation
FV	AVERCAPT	Average capacity factor for each route using tractor trailer	Sum of LF(it)*TKpct(it) see Workpaper C, page 2, line 17
FW	AVERCAP9	Average capacity factor for each route using 9 ton trucks	Sum of LF(it)*TKpct(it) see Workpaper C, page 2, line 17
FX	AVERCAP7	Average capacity factor for each route using 7 ton trucks	Sum of LF(it)*TKpct(it) see Workpaper C, page 2, line 17
FY	AVERCAP5	Average capacity factor for each route using 5 ton trucks	Sum of LF(it)*TKpct(it) see Workpaper C, page 2, line 17
FZ	AVERCAP2	Average capacity factor for each route using 2 ton trucks	Sum of LF(it)*TKpct(it) see Workpaper C, page 2, line 17
GA	COMPLOAD	Holding cell for average capacity factor for each route regardless of truck type	Sum of LF(it)*TKpct(it) see Workpaper C, page 2, line 17
GB	Unused	Unused	Unused
GC	DISPTRIP	Total daily dispatches to Stations and Branches	Computation
GD	HAULTRIP	Total daily trips to Associate Offices	Computation
GE	COLLTRIP	Total daily colleciton runs from stations and branches	Computation
GF	FIRMTRIP	Total daily collection runs for pickups from mailers/firms	Computation
GG	OTHRTRIP	Other daily trips	Computation
GH	TOTAL TRIPS	Total daily trips including non-scheduled	Computation
GI	NONSCHED	Total annual trips including non-scheduled	Computed in individual facility sheets and summed
GJ	CFM	Cubic Foot Miles, see Workpaper C, page 2	Computed in individual facility sheets and summed
GK	LOADDECI	Daily times in hours instead of minutes see columns FE through FL above	Derived from Form 4533
GL	CALLDECI	Daily times in hours instead of minutes see columns FE through FL above	Derived from Form 4533
GM	SPOTDECI	Daily times in hours instead of minutes see columns FE through FL above	Derived from Form 4533
GN	NEUVDECI	Daily times in hours instead of minutes see columns FE through FL above	Derived from Form 4533
GO	CLOCDECI	Daily times in hours instead of minutes see columns FE through FL above	Derived from Form 4533
GP	TRAIDECI	Daily times in hours instead of minutes see columns FE through FL above	Derived from Form 4533
GQ	WASHDECI	Daily times in hours instead of minutes see columns FE through FL above	Derived from Form 4533
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GR	NMVSDECI	Daily times in hours instead of minutes see columns FE through FL above	Derived from Form 4533
GS	Unused	Unused	Unused
GT	TLOAD	Annual times in hours columns GK through GR above, times route frequency	Derived from Form 4533
GU	TON CALL	Annual times in hours columns GK through GR above, times route frequency	Derived from Form 4533
GV	TSPOTTER	Annual times in hours columns GK through GR above, times route frequency	Derived from Form 4533
GW	TMANEUVE	Annual times in hours columns GK through GR above, times route frequency	Derived from Form 4533
ĠΧ	TCLOCKIN	Annual times in hours columns GK through GR above, times route frequency	Derived from Form 4533
GY	TTRAININ	Annual times in hours columns GK through GR above, times route frequency	Derived from Form 4533
GZ	TWASHUP	Annual times in hours columns GK through GR above, times route frequency	Derived from Form 4533
HA	TNON_MVS	Annual times in hours columns GK through GR above, times route frequency	Derived from Form 4533
HB	TNONDRIV	Annual times in hours columns GK through GR above, times route frequency	Derived from Form 4533
HC	TDRIVE	Annual driving times in hours from schedules	Derived from Form 4533
HD	VEHIRUNS	Total runs, including multi-vehicles	Derived from Form 4533
HE	EXTRARUN	Runs for multi-vehicle routes	Derived from Form 4533
HF	SCHEDNUM	Number of routes scheduled (Total runs minus multi-vehicle runs).	Derived from Form 4533
HĢ	ANNUTRIP	Annual trips computed from Form 4533	Derived from Form 4533
HH	SEGPDTIM	Daily paid time for multi-vehicle routes, apportioned to truck type	Derived from Form 4533
HI	TOTHOUR	Annual paid time for multi-vehicle routes, apportioned to truck type	Derived from Form 4533
HJ	SPOTPAID	Spotter time for multi vehicle routes	Derived from Form 4533
HK	COMPANMI	Annual miles for each route	Derived from Form 4533
HL	COMPANHR	Total annual hours	Derived from Form 4533
HM	NONDRIVE	Sum of non-drive time activities for each route.	Derived from Form 4533
HN	DRIVE	Total time minus non-drive time for each route	Derived from Form 4533
HO	AVGMPH	See Workpaper C, page 3	Calculation done at the facility level
HP	AVGDIST	See Workpaper C, page 3	Calculation done at the facility level
HQ	No Heading	Intermediate step for calculating average capacity	Calculation done at the facility level
HR	No Heading	Intermediate step for calculating average capacity	Calculation done at the facility level
HS	No Heading	Intermediate step for calculating average capacity	Calculation done at the facility level
ΗT	No Heading	Intermediate step for calculating average capacity	Calculation done at the facility level
HU	No Heading	Intermediate step for calculating average capacity	Calculation done at the facility level
HV	No Heading	Intermediate step for calculating average capacity	Calculation done at the facility level
HW	No Heading	Intermediate step for calculating average capacity	Calculation done at the facility level
HX	No Heading	Intermediate step for calculating average capacity	Calculation done at the facility level
HY	No Heading	Intermediate step for calculating average capacity	Calculation done at the facility level
HZ	No Heading	Intermediate step for calculating average capacity	Calculation done at the facility level
IA	No Heading	Intermediate step for calculating average capacity	Calculation done at the facility level
1B	No Heading	Intermediate step for calculating average capacity	Calculation done at the facility level
IC	No Heading	Intermediate step for calculating average capacity	Calculation done at the facility level
ID	No Heading	Intermediate step for calculating average capacity	Calculation done at the facility level
ΙE	No Heading	Intermediate step for calculating average capacity	Calculation done at the facility level

łΕ	No Heading	Intermediate step for calculating average capacity
IG	No Heading	Intermediate step for calculating average capacity
IH	No Heading	Intermediate step for calculating average capacity
H	No Heading	Intermediate step for calculating average capacity
1J	No Heading	Intermediate step for calculating average capacity
lK	No Heading	Intermediate step for calculating average capacity
1L	No Heading	Intermediate step for calculating average capacity
IM	No Heading	Intermediate step for calculating average capacity
IN	No Heading	Intermediate step for calculating average capacity
10	No Heading	Intermediate step for calculating average capacity
1P	No Heading	Intermediate step for calculating average capacity
IQ	No Heading	Intermediate step for calculating average capacity
1R	No Heading	Intermediate step for calculating average capacity
IS	No Heading	Intermediate step for calculating average capacity
IT	AvgCap	Sum of columns HQ through IS, see Workpaper C, page 3.

Calculation done at the facility level Calculation done at the facility level

DECLARATION

I declare under penalty of perjury that the foregoing answers are true and correct to the best of my knowledge, information, and belief.

Date: 9-4-97

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CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon all participants of record in this proceeding in accordance with section 12 of the Rules of Practice.

Eric P. Koetting

475 L'Enfant Plaza West, S.W. Washington, D.C. 20260–1137 September 4, 1997